Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee	))))	IB Docket No. 16-185

COMMENTS OF IRDIUM

Iridium Satellite Communications submit these comments in response to the Public Notice issued by the International Bureau seeking comments on recommendation WRC-19 proposals ("Recommendations") approved by the Commission's World Radiocommunication Conference Advisory Committee ("WAC"). These comments address Document WAC/068 (01.10.18) ("WAC/068") on Agenda Item 1.5 which considers the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion ("ESIMs") communicating with geostationary space stations in the fixed-satellite service. With these comments, Iridium would like to again urge the Commission to defer approving any ESIM proposal at this time, or, in the alternative, approve the View C Agenda Item 1.5 proposal.

I. INTRODUCTION

As the Commission knows, Iridium is a United States success story. Out of all the speculative and ambitious satellite initiatives put before the world since the opening of satellite communications to commercial operators, Iridium survives as the world's largest commercial satellite constellation, operating as a fully meshed network with global coverage.

Iridium exists today because of the tireless commitment – since the 1990s – of the United States Government to make such an ambitious system a reality, because of Iridium perseverance to succeed where others have failed, and because of Iridium partners who innovate and provide Iridium services to customers worldwide.

Iridium employs a partner ecosystem of more than 300 partners worldwide. Iridium's partners sell voice and data products and services, are value-added resellers, are value-added manufacturers, are value-added developers, and are Iridium dealers. Collectively, Iridium's partners provide communication solutions for the Internet of Things, aviation and aviation safety, maritime and maritime safety, government and defense, and land mobile and recreation.

It is critical to Iridium businesses that the Commission ensure the integrity of the Iridium network. In particular, a crucial requirement of the network's operation is feeder link communications that are free of harmful interference. Given the longstanding United States commitment and use of the Iridium network, the integrity of Iridium's feeder link communications (and thus the integrity of the Iridium network) and the integrity of spectrum currently favorable to MSS feeder link deployment on a global basis should not be compromised.

II. THE COMMISSION SHOULD ONLY ADOPT RECOMMENDATIONS THAT ENSURE PROTECTION OF INCUMBENT SERVICES AND THEIR FUTURE GROWTH – THEREFORE VIEW A SHOULD NOT BE APPROVED.

Document WAC/68 (01.10.18) – Agenda Item 1.5: *to consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution* ***158 (WRC-15)***

As mentioned above, harmful interference-free use of these bands for Iridium's NGSO MSS feeder link communications is crucial to the operation of the Iridium satellite network. To protect incumbent services, of which NGSO MSS feeder link service is one, and provide for their future growth, the Commission should only adopt WAC Recommendations that ensure protection and the future growth of these services. Document IWG-3/051 ("Doc. 051"), upon which ESIM proponents base View A of WAC/068, does not do this. The View A proposal fails to demonstrate protection of non-geostationary ("NGSO") MSS feeder links that may operate within the frequency bands 19.3-19.7 GHz and 29.1-29.5 GHz while offering no alternative.

As the Commission knows, in the International Telecommunication Union's Working Party 4A ("WP 4A"), there are ongoing studies intended to demonstrate compatibility (or not) between ESIM and NGSO MSS feeder links. However, the studies are not complete and, therefore, there are no conclusions concerning compatibility.

View A of WAC/068 states:

> "*d)* that ITU-R studies have shown that aeronautical ESIM are capable of operating without causing harmful interference interfering with non-GSO mobile-satellite service feeder link satellite receivers in the 29.1-29.5 GHz band[.]"[1]

The above statement is simply incorrect. As noted in View C, the NGSO MSS feeder link studies in WP 4A are not complete. Indeed, the matter has not even been addressed formally within WP 4A. In View C, Iridium notes:

> "The studies regarding NGSO MSS feeder links are in process in ITU-R WP 4A ("WP 4A") but are not complete. Currently, in WP 4A there exists Document 4A/826, Annex 15 ("Annex 15"), with the following editor's note:

[1] WRC-19 Agenda Item 1.5, Doc. WAC/068, View A, Draft New Resolution [A15] (WRC-19), at 9, *considering d* (Oct. 1, 2018).

'*Editor's note: This document is a compilation of contributions received on this subject at the July 2018 meeting of WP 4A and its content is not agreed at this time]*.'

The editor's note is there because Annex 15 consists of a simple compilation of input contributions, with no analysis by WP 4A."[2]

The Commission should not approve a WAC Recommendation stating that ITU-R studies conclude that compatibility between ESIM and NGSO MSS feeder links exists, when no such compatibility has been established. Further, the Commission should remain cognizant that Res. **158 (WRC-15)** states:

"*resolves to further invite the 2019 World Radiocommunication* Conference

to consider the results of the above studies and take necessary actions, as appropriate, provided that the results of the studies referred to *in resolves to invite ITU-R are complete and agreed* by ITU-R study groups."[3]

III. IF SUCCESSFUL AT WRC-19, ESIM WILL HAVE MORE THAN ADEQUATE SPECTRUM – EVEN WITHOUT THE 19.3-19.7 GHZ AND 29.1-29.5 GHZ BANDS.

If studies are not concluded, or they show incompatibility with MSS feeder links, and the 19.3-19.7/29.1-29.5 GHz MSS feeder link bands are excluded in their entirety, ESIM proponents will still have access to a large amount of spectrum. Iridium notes that as a result of WRC-15 ESIM proponents already have access to 500 + 500 MHz of valuable Ka-band spectrum. Even without the 400 + 400 MHz of the 19.3-19.7 GHz and 29.1-29.5 GHz bands used for NGSO MSS feeder links, if ESIM proponents secure the remaining spectrum considered in Agenda Item 1.5, combined with the 500 + 500 MHz secured at WRC-15, they would walk away from WRC-19 with access to a total of 2100 + 2100 MHz of Ka-band spectrum. This result yields what is undoubtedly a sufficient amount of spectrum for ESIM while maintaining the integrity of the Iridium satellite network feeder links, and future use of the 19.3-19.7 GHz and 29.1-29.5 GHz bands for NGSO MSS feeder links.

IV. VIEW C PROVIDES REASONABLE ALTERNATIVES TO VIEW A AND SHOULD BE APPROVED.

View C provides the Commission with two options for addressing Agenda Item 1.5 at this juncture. For the reasons stated above, Iridium urges the Commission to defer approving any Agenda Item 1.5 proposal until ITU-R WP 4A studies conclude and are agreed. On the basis

[2] *See id.* at 32 (citing ITU-R WP 4A, *Earth stations in motion (ESIM) compatibility with non-GSO MSS feeder links in the bands 19.3-19.7 GHz and 29.1-29.5 GHz*, Document 4A/486, Annex 15 (July 23, 2018)).
[3] Resolution 158 (WRC-15) (emphasis added).

of completed studies, the Commission could advocate an Agenda Item 1.5 proposal, that will still be timely, will address all parties' concerns, and would likely encounter less resistance than the View A proposal will. Thus, there is no need for the Commission to force a proposal now.

Should the Commission adopt a proposal now, the second-best choice is to adopt the View C Agenda Item 1.5 proposal. The View C provides for access to some NGSO MSS feeder link spectrum (consistent with availability in the United States and Europe)[4] while providing alternative protection mechanisms for NGSO MSS feeder links.

Respectfully submitted,

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[4] *See* Doc. WAC/068, Attachment to View C, at 38-39.